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memorandum

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REPLY TO ATTN OF: Office of Environmental Policy and Assistance:DiCerbo:65047

SUBJECT: INFORMATION--1998 Compliance Deadline for Underground Storage Tank (UST) Systems

TO:

Distribution

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1998 Compliance Deadline for Underground Storage Tank (UST) Systems

EPA regulations specify that by December 22, 1998, all underground petroleum and hazardous substance UST systems that were installed before December 22, 1988, must meet certain spill, overfill, and corrosion protection requirements. In addition, some UST systems must meet more stringent leak detection requirements. Part 280 of Title 40 of the Code of Federal regulations details standards for these "existing" petroleum and hazardous substance UST systems.

Need for UST Regulations

Federal regulations govern roughly 1.1 million active USTs. About 96% of these contain petroleum products, including used oil. Fewer that 1% contain hazardous materials, and about 2% are empty. Petroleum or hazardous substance releases from USTs can occur during tank filling. They can also occur from leaks in tanks or piping that result from corrosion, structural failure, or faulty installation. As of September 1996, EPA has reported nearly 318,000 confirmed releases at federally regulated USTs. More are expected. These releases can contaminate soil and groundwater and cause fires or explosions.

USTs Subject to Upgrading Requirements

EPA regulations define an existing UST system as one that was installed before December 22, 1988. UST systems installed after December 22, 1998 are considered "new" UST systems. A petroleum UST contains petroleum or a mixture of petroleum with very small quantities of other regulated substances.[1] Petroleum USTs typically contain motor fuels, distillate fuel oils, lubricants, petroleum solvents, and used oils. A hazardous substance UST contains a hazardous substance defined in §101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980. However, hazardous substance USTs do not include hazardous wastes regulated under Subtitle C of RCRA; therefore USTs containing such hazardous wastes are exempt from the upgrading requirements. Also exempt are tanks containing radioactive materials regulated under the Atomic Energy Act of 1954. Thus, Hanford tanks containing hazardous and radioactive wastes are not subject to the upgrading requirements described in 40 CFR 280.

Upgrading Requirements

By December 22, 1998, all existing petroleum and hazardous substance USTs must be equipped with spill protection, overfill protection, and corrosion protection devices. Owners/operators have three choices for complying with these requirements. These are:

[1] Regulated substances are petroleum and petroleum-based substances derived from crude oil and substances defined in §101(14) of the Comprehensive Environmental Response, Compensation, and Liability Act, but do not include substances regulated as hazardous wastes under Subtitle C of RCRA.

Add spill, overfill, and corrosion protection[2]
Close the existing UST.
Replace the closed existing UST with a new UST. (When new USTs are installed, they must have spill, overfill, and corrosion protection, and leak detection devices.)

The following paragraphs summarize the basic upgrading requirements for existing USTs.

Spill protection. Spills cause releases at many UST sites. Generally, spills occur at the fill pipe when a delivery truck hose is disconnected. Such spills are usually small, but repeated small releases can lead to significant environmental problems. The regulations require that by December 22, 1998, existing tanks must have catchment basins to contain spills from delivery hoses (§280.21(d) and §280.20(c)).

Overfill protection. Overfilling a tank can lead to large releases at the fill pipe and through loose fittings on the top of the tank. Existing USTs must have overfill protection devices by December 22, 1998 that will do one of the following:

Automatically shut off flow into the tank when the tank is no more than 95% full, or
Alert the operator when the tank is no more than 90% full, or
Restrict for 30 minutes prior to overfilling, alert the operator 1 minute prior to overfilling, or automatically shut off flow so that none of the fittings on the top of the tank are exposed to product (§280.21(d) and 280.20(c)).

Corrosion protection. Corrosion occurs when bare metal, soil, and moisture combine to produce an underground electric current that destroys hard metal. Because unprotected steel USTs can corrode and release product through corrosion holes, federal regulations require owners/operators to install corrosion protection in existing tanks by December 22, 1998. Existing tanks may already meet the corrosion protection requirements if one of the following performance standards is satisfied:

The tank and piping are made entirely of noncorrodible material, such as fiberglass, or
The tank and piping are made of steel having corrosion-resistant coating and having cathodic protection, or
The tank is made of steel clad with a thick layer of noncorrodible material.

Because it is impractical to coat or clad unprotected steel USTs, owners/operators of such tanks must choose one of the three following methods to provide corrosion

[2] USTs that never receive more than 25 gallons at a time are not required to meet the spill and overfill protection requirements.

protection:

- Add cathodic protection, or
- Add interior lining to the tank, or
- Combine cathodic protection and interior lining (§280.21(b)).

The regulations also require that by December 22, 1998, *existing piping* meet one of the following characteristics:

- Uncoated steel piping has cathodic protection, or
- Steel piping has corrosion-resistant coating and cathodic protection, or
- Piping is made of, or enclosed in, noncorridible material, e.g., fiberglass (§280.21(c)).

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Additional Requirement for Hazardous Substance UST Systems

Besides the spill, overfill, and corrosion protection upgrades required of all existing petroleum and hazardous substance USTs, hazardous substance USTs must meet additional leak detection requirements by December 22,1998.

Background. The UST regulations are intended in part to ensure that releases or "leaks" from USTs are discovered before contamination can spread. All petroleum and hazardous substance USTs must provide for leak detection. New USTs (those installed after December 22, 1988) must have leak detection systems when they are installed. EPA has found that hazardous substances that have leaked into the soil are more difficult to detect and to clean up than petroleum leaks. Consequently, leak detection requirements for new hazardous substance USTs are more stringent than those for new petroleum USTs. Thus, while new petroleum USTs can meet leak detection requirements by selecting one of several specified leak detection methods,[3] new hazardous substance USTs must be equipped with secondary containment systems and monitoring devices. By December 22, 1998, all *existing* hazardous substance tanks must meet the more stringent leak detection requirements for new hazardous substance USTs.

New requirements for existing hazardous substance USTs. EPA regulations require that by December 22, 1998, existing hazardous substance UST systems must have secondary containment systems (§280.42). Secondary containment is created by placing a barrier so that any leaks are contained within the space between the barrier and the tank and piping. The system may consist of double-walled tanks or external liners (including vaults) and must be equipped with monitoring to detect leaks.

- *Closing USTs*

[3] These methods included secondary containment and interstitial monitoring, automatic tank gauging systems, vapor monitoring, groundwater monitoring, statistical inventory reconciliation, manual tank gauging, and tank tightness testing and inventory control.

If an existing petroleum or hazardous substance UST system is not upgraded by December 22, 1998, it must be properly closed by that date. After the existing system has been closed, it may be replaced by installing a new UST. When closing or replacing an UST, the regulations require the following:

- Notification of the regulatory authority at least 30 days before the UST is removed from service for closure or replacement.
- Determination of whether releases from the UST have contaminated the surrounding environment. If contamination is found, corrective action will be required.
- Emptying the tank of liquids, dangerous vapor levels, and accumulated sludge by trained personnel following standard safety procedures. Once properly emptied, the tank can be removed. It can also be left in the ground, if it is filled with a chemically inactive solid; however, some states may require removal of closed USTs.

- *Importance of Upgrading Now*

As December 1998 approaches, increased demand to upgrade existing USTs may lead to higher charges for contractors and supplies. Upgrades can take several months; missing the 1998 deadline can result in citations and fines. Finally, upgrading now will help prevent leaks that could lead to costly mandatory cleanups.

- *Further Information*

Further details on federal upgrading requirements are found in 40 CFR 280, Subparts A, B, C, and D. Owners/operators should also contact their state regulatory authorities for additional requirements and deadlines.

- *References*

U.S. Code of Federal Regulations, Title 40, Part 280.

U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, *Cleaning Up the Nations Waste Sites: Markets and Technology Trends,* EPA 542-R-96-05, April 1997.

U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, *Don=t Wait Until 1998, Spill, Overfill, and Corrosion Protection for Underground Storage Tanks*, EPA 510-B-94-002, April 1994.

U.S. Department of Energy, Office of Environmental Policy and Assistance, "*Regulated Underground Storage Tanks*, DOE/EH-2231/004/0191.

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